

REMARKS

The Official Action of 13 September 2006 has been carefully considered and reconsideration of the application as amended is respectfully requested.

Claim 1 has been amended to remove the phrase that the Examiner considered not to be supported by the specification as filed. The upper limit of the methylisothiazolone content has now been recited in functional terms in claim 1 in accordance with the disclosure in the specification at, for example, page 17, lines 21-27 and Table 3 on page 18. In this respect, Applicants respectfully note that the results in Table 3 show that the final viscosity of the ink after storage as compared with the initial viscosity of the ink before storage (i.e., the “storage stability” evaluation described on page 17) depends on the respective amounts of the recited additives and that, if the methyl isothiazolone content is too high, the storage stability will suffer.

Claims 22-24 have been added more completely to define the subject matter which Applicants regard as their invention. Support for the recitations in the new claims appears in the specification as filed at, for example, page 17, lines 21-27 and Table 3 on page 18 (see, also, page 3, lines 5-26, and page 18, lines 5-9).

The amendment to claim 1 is respectfully believed to remove the basis for the Examiner’s rejection under 35 USC 112, first paragraph appearing at paragraph 4 of the Official Action.

The Examiner has objected to claim 3 as allegedly failing further to limit claim 1 because claim 3 allegedly covered a combined amount of methylisothiazolone (MIT) and octylisothiazolone (OIT) of 0-1000 ppm whereas claim 1 was limited to a combined amount of MIT and OIT of at least 110 ppm. However, Applicants respectfully note that **claim 3 incorporated the limitations of claim 1, including the limitation of a combined amount of MIT and OIT of at least 110 ppm.** Accordingly, Applicants respectfully submit that the objection was in error. Applicants have nevertheless now amended claim 3 expressly to recite the lower limit from claim 1 whereby to render the issue moot.

The claims stand rejected under 35 USC 103(a) as allegedly being unpatentable over WO 2001/44384 in view of EP 676140 or over this combination of references further in view of either Kurabayashi et al or Tabayashi et al. The claims also stand rejected under 35 USC 103(a) over WO 2000/75245 in view of WO 2001/44384 and EP 676140. Applicants respectfully traverse these rejections.

The claimed invention is based at least in part upon Applicants' discovery of the result-effective nature of controlling the claimed two (2) sets of parameters (the respective amounts of MIT and OIT, and the combined amount of MIT and OIT) in an ink composition comprising as colorant a pigment encapsulated by a polymer having a carboxyl group. In this connection, the specification shows not only the criticality of maintaining these two (2) sets of parameters within the claimed limits (see Table 3 and the discussion at pages 7-9 of Applicants' Amendment filed 29 June 2006), but also the result-effective nature of the colorant in determining the critical

(claimed) limits. As can be seen by comparing Table 4 (specification at pages 19-20) with Table 3 (specification at page 18), the combined effects of MIT and OIT on an ink composition differ, for example, according to the nature of the colorant in the ink composition. See specification at page 19, lines 1-24 for a description of the comparative ink compositions and evaluations used for the inks in Table 4.

The Examiner, while acknowledging that the comparative data set forth in Table 3 establishes the criticality of using MIT and OIT in combined amount and respective amounts as claimed, contends that this criticality would have been expected because EP 676140 allegedly already discloses the criticality of using a combination of MIT and OIT in the amounts as claimed. However, Applicants respectfully call the Examiner's attention to the fact that, as shown by Table 4 (discussed above), what amounts of MIT and OIT are critical **depends on the application**. EP 676140 acknowledges this on page 2, lines 28-32:

“The novel combination of isothiazolones has been found to be very effective in a **variety of loci**, e.g., metalworking fluid, cosmetics and polymer emulsions. Concentrations of biocide composition are preferably about 1 to 400 ppm **based on locus**. Metalworking fluids are well known to comprise lubricant, corrosion inhibitor, and biocide. The preferred amount of MI **in metalworking fluids** is about 5 to 200 ppm, and the preferred amount of OI is 5 to 100 ppm, with the most preferred ratio of MI:OI being from 3:1 to 1:1.” Emphasis added.

In other words, the reference upon which the Examiner relies for the claimed amounts

makes clear that the criticality of specific amounts of MIT and OIT is determined with respect to a particular use/application. However, the reference does not show or suggest the use the claimed composition, or any criticality of amounts, for the claimed application, i.e., an ink composition. So, for example, the reference does not consider the criticality, if any, of the respective amounts of MIT and OIT on the viscosity of an ink after storage. The reference *a fortiori* does not show the criticality of the respective amounts of MIT and OIT in an ink comprising a pigment encapsulated by a polymer having a carboxyl group.

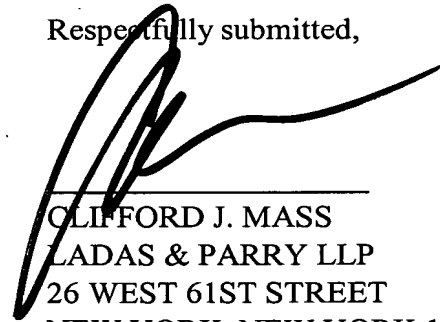
In any event, the portions of the reference to which the Examiner refers as allegedly showing the criticality of the claimed amounts, do not show the claimed criticality. Thus, Table 5 on page 7-9 of the reference show synergy between MIT and OIT in respective amounts that fall both inside and outside of the claimed ranges and, in fact, show some of the greatest synergy outside of the claimed ranges: (a) SI of 0.51 for *E. coli* with 8 ppm of MI (page 7); (b) SI of 0.56 for *P. oleovorans* with 0.5 ppm of MI (page 8); and (c) SI of 0.38 for *P. oxalicum* with 8 ppm of OI (page 9). (Note: according to the reference at page 4, lines 19-20, synergy is greatest when SI is smallest.) EP 676140 clearly does not show or suggest the criticality of the claimed amounts in the claimed application.

Similarly, the other cited references do not show or suggest the criticality of the claimed amounts in the claimed application. WO 2001/44384 does not show or suggest **any** ink composition containing MIT or OIT, as acknowledged by the Examiner. WO 2000/75245 describes only a **very broad range** for a combined amount of MIT and OIT (0.01-0.5%, i.e.,

100-5000 ppm) in an ink with a **different pigment**. Moreover, this reference does not show or suggest the result-effective nature of also limiting the respective amounts of MIT and OIT in the ink as claimed. Accordingly, Applicants respectfully submit that it is only through hindsight, with the aid of Applicants' specification, that one of skill in the art could (a) combine the cited references to arrive at the claimed ink with the claimed amounts and combined amount of MIT and OIT and (b) ascertain the criticality of the claimed combined and respective amounts of the recited components.

In view of the above, Applicants respectfully submit that the prior art and other rejections and objections should be withdrawn and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,



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